Abstracts

These selected abstracts and titles from the world literature are arranged in the following sections:

Syphilis and other treponematoses (*Clinical and therapy*)

Cephalexin Therapy for Infectious Syphilis

DUNCAN, W. C., and KNOX, J. M. (1974) *Arch. Derm.*, **110**, 77

In vitro studies with the cultivable Nichols treponeme showed that its multiplication was inhibited by 5 to 10 μg cephalexin per ml, although this does not necessarily reflect its activity against virulent *Treponema pallidum*. 250 mg. cephalexin was given orally four times daily for 15 days to seven patients with primary, ten with secondary, and one with early latent syphilis. Because there were eleven failures on this regime, the dose was doubled and a total of 30 g. given over 15 days to 28 further patients. Thirteen of these had primary infections and all responded satisfactorily; ten had reactive VDRL tests before treatment and in eight these had reversed to negative at the end of a year's observation. Fourteen patients had secondary syphilis; eleven of these responded well and seven had become seronegative after a year. Three patients were classed as failures; two had serological relapses and the third also a clinical relapse. A further patient with an early latent infection made a good response. In fifteen patients tested, treponemes disappeared from their lesions 48 to 72 hrs after treatment. As a control group, 35 patients with early infections were treated with 30 g. tetracycline (presumably over 15 days). Thirteen were adequately followed up for a year; two needed re-treatment although one of these may have been re-infected.

The only side-effects noted after cephalexin were urticaria in one patient and a gastrointestinal upset in another. Thirteen patients were known to be allergic to penicillin but none experienced any untoward effects. Cephalexin at a dosage of 30 g. over 15 days is thought to be an acceptable alternative to penicillin when this cannot be given. *A. E. Wilkinson*

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Papulo-ulcerative Syphilid. Lues Maligna. A Case Report

BUCK, C. (1974) *Hautarzt*, **25**, 351

Osteo-cutaneous Tertiary Syphilis in a Patient with G.P.I. treated intensively with Penicillin for Two Years. Rapid Action of Bismuth

(Syphilis tertiaire cutanéo-osseuse apparue chez un paralytique général traité depuis deux ans par une pénicillino-thérapie intensive. Action rapide du bismuth)

DEGOS, R., DELZANT, O., and TONNELIER, P. (1973) *Bull. Soc. franç. Derm. Syph.*, **80**, 606

Syphilis (*Serology and B.F.P. Phenomenon*)

A Clinical Study on 29 Cases of Debatable STS and TPI Sero-reactions in Greenland

KNUDSEN, E. A. (1974) *Acta derm.-venereol. (Stockh.)*, **54**, 311

Greenland is a relatively closed community with a very high incidence of gonorrhoea; some 8,000 to 9,000 cases are treated annually with a standard dose of 5 mega units penicillin with 1 g. probenecid. Small outbreaks of syphilis have occurred and in 1972 the incidence is said to have been about seven times higher than in Denmark. The finding of appreciable numbers of patients with negative or doubtful lipoidal antigen tests but reactive TPI tests (S-T+) led to the present study.

In 1969 there were four known cases of early infectious syphilis and 24 patients were found to show the S-T+ pattern of results; 21 of these and 117 of their known contacts were investigated and eight of the contacts were also found to have S-T+ tests. Twenty out of the 29 S-T+ patients were contacts of others showing this pattern; none showed any definite clinical evidence of syphilis. The 29 S-T+ patients had had 38 courses of treatment for gonorrhoea and nine for other conditions with antibiotics active against *Treponema pallidum*, a mean of 1·6 treatments per patient. Their 109 seronegative contacts had had 150 courses of treatment for gonorrhoea and 75 for other conditions, a mean of 2·1 courses per patient during 1968–1969. From the known amounts of antibiotics supplied to Greenland, these figures are thought to be a considerable underestimate of the amounts actually received.

The S-T+ pattern of results may represent syphilis which has been masked or cured by the administration of penicillin for gonorrhoea or other conditions, or may be an unsuspected

non-specific reaction in the TPI test. The author inclines to the former explanation. *A. E. Wilkinson*

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Incidence of Positive Serological Tests for Treponemal Disease in the Niokolonko (Malinka) People of Senegal
(La fréquence des séro-positivités tréponémiques chez les Niokolonko (Malinke) du Sénégal)
CIRERA, P., and BOULOUX, C. (1973) *Bull. Soc. Path. Exot.*, **66,** 696

The Niokolonko (Malinka) people live in the Kedougou district of eastern Senegal and number about 6,600 persons. Serological tests (Kline, WR, and Reiter protein complement-fixation test) were carried out on 602 sera collected during a survey carried out in 1971–1972. Positive results with all three tests were given by 9·1 per cent. of 457 sera from adults and 2·7 per cent. of 145 sera from children under 15 years of age. The tests gave discrepant results in 20 and 9·5 per cent of the sera from these two age groups, and 23·1 and 9·5 per cent. gave anticomplementary results.

Another tribe, the Bedik, live in the same area, but there is little intermarriage between the two groups. Seropositivity was higher among the Bedik than among the Niokolonko (14·9 per cent. positive and 27·3 per cent. discrepant results), although anticomplementary results were less common (9·7 per cent.). Although no clinical investigations were carried out during the survey, the authors think that the positive serological tests are due to yaws. No explanation is advanced to account for the surprisingly high proportion of anticomplementary results. *A. E. Wilkinson*

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Serological Prevalence of Treponemal Disease in Two Populations of the Serer Tribe
(Prévalence sérologique des tréponématoses dans deux populations Sérér)
LINHARD, J., BAYLET, R., DIEBOLT, G., and DIOP, S. (1973) *Bull. Soc. Path. Exot.*, **66,** 701

Kline, VDRL, and Kolmer Wassermann reactions were carried out on two groups of the Serer tribe: (*a*) persons who had always lived in the rural area of Niarhar in Senegal; (*b*) persons who had migrated to the town of Dakar and lived there for at least 3 years or were children under 4 years of age who had been born in Dakar.

Positive results with all three tests were found with sera from twenty of 289 (6·9 per cent.) of the town dwellers and with 23 of 396 (5·8 per cent.) of those from rural areas. Analysis of the age incidence of seropositivity showed that no positive results were found in children less than 5 years of age in either area, suggesting the absence of active endemic syphilis. Above this age, positive serum reactions increased in frequency with advancing age. The most marked difference was found in children aged 10 to 19 years; positive results were found in five of 93 of those living in Dakar but in only one of 107 of those from the country area. In the former group, all the positive results occurred in girls and none in boys, 70 per cent of these girls were single and had come to Dakar to work among urban families. The authors think that these young girls coming into a strange environment form a group particularly vulnerable to the risk of venereal infection in an area where treponemal disease seems to be rife; they quote a seropositivity rate of 40 per cent. among blood donors in Dakar. *A. E. Wilkinson*

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Infantile Syphilis accompanied by Anticomplementary Effect of Cryoglobulin WATANABE, S., and WATANABE, S. (1974) *Arch. Derm.*, **109,** 889

Syphilis (*Pathology and experimental*)

The Glomerulopathy of Congenital Syphilis. A Curable Immune-deposit Disease
YUCEOGLU, A. M., SAGEL, I., TRESSER, G., WASSERMAN, E., and LANGE, K. (1974) *J. Amer. med. Ass.*, **229,** 1085

An antigen-antibody reaction in the glomerular basement membrane is thought to play a part in the production of renal lesions in neonatal syphilis. Three infants between 2 and 3 months of age were studied. All had marked clinical signs of congenital syphilis and VDRL tests on their sera were positive. All had microscopic haematuria and proteinuria and two were hypertensive.

Renal biopsies showed a slight to moderate increase in the mesangium, with hypercellularity of the glomeruli, thickening of the basement membrane, and focal interstitial lymphocytic infiltration. Immunofluorescence studies in two of the cases showed coarse granular deposition of IgG and β_1C on the glomerular basement membrane. Electronmicroscopic studies showed subepithelial and intramembranous electron dense deposits and areas of fused and flattened foot processes.

Treatment with penicillin resulted in the disappearance of clinical signs and biochemical changes. In two of the infants renal biopsies were repeated 3 and 6 months after the completion of treatment. These showed resolution of the histological changes and almost complete disappearance of the immune complex deposits; this suggests that the renal lesions are reversible if treatment is given sufficiently early in the disease. *A. E. Wilkinson*

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Oxygen Uptake by *Treponema pallidum* COX, C. D., and BARBER, M.K. (1974) *Infect and Immun.*, **10,** 123 (Bacterial and Mycotic Infections)

Ultrastructure of Cultivable Treponemes. I. *Treponema phagedenis, Treponema vincentii,* and *Treponema refringens*
HOUGEN, K. H. (1974) *Acta path. microbiol. scand.*, **82,** 329
II. *Treponema calligyrum, Treponema minutum,* and *Treponema microdentium*
HOUGEN, K. H. (1974) *Acta path. microbiol. scand.*, **82,** 495

Gonorrhoea (*Clinical*)

Gonorrhoea Screening in an Urban Hospital Family Planning Program NOONAN, A. S., and ADAMS, J. B. (1974) *Amer. J. publ. Hlth*, **64,** 700

The object of the study was to elucidate any relationship between the prevalence of gonorrhoea and the use of modern contraception and also the influence contraception might have on the symptoms of gonorrhoea in women. The authors give a comprehensive review of the literature. They point out that both the prevalence of gonorrhoea in the USA (*e.g.* a rise in Atlanta, Georgia, from 956 to 2,486 per 100,000 between 1960 and 1970) and the percentage of physician-prescribed contraceptives have risen sharply within the past decade or so (*e.g.* in Atlanta 3,457 women applied for contraceptive advice in the first 9 months of 1967—a figure which increased to 9,336 for the first 9 months of 1971).

There is conflicting evidence on whether a causal relationship exists between these two parallel phenomena. For example, in the United Kingdom, Cohen found that in 1965 the incidence of gonorrhoea for the total clinic population was 14 per cent., but in women on oral contraception (OC) it was significantly raised to 24 per cent. Juhlin and Liden in Sweden, however, found no increased prevalence of gonorrhoea in women using oral contraception. The literature on the incidence of pelvic inflammatory disease (PID) related to use of various types of intrauterine device (IUD) indicates that the findings of Statham and Morton were correct, namely that the incidence of complications of gonorrhoea in women is increased by the use of an IUD.

The present study was carried out at the Family Planning Clinic at Grady Memorial Hospital in Atlanta, Georgia, in 1970. A total of 10,900 women sought advice, and every third non-postpartum patient was selected for screening tests for gonorrhoea. Swabs were taken from the cervical canal and inoculated on to Martin-Lester Transgrow medium and incubated in a CO_2 atmosphere. Colony morphology, oxidase test, and Gram-staining were used to identify positive cultures. Women were considered 'symptomatic' if they complained of pelvic or colicky abdominal pain, or if bimanual examination elicited undue discomfort. Dyspareunia *per se* was not counted a symptom.

The authors report the following findings:

(1) The prevalence of gonorrhoea in women using OC or IUD is essentially the same.

(2) The combined prevalence of gonorrhoea in women using OC and IUD is significantly greater than for the combined group of women using injections, no contraception, or 'other' methods (*i.e.* vaginal foam, jelly creams, or diaphragm).

(3) Women using IUD had a significantly higher rate of symptoms than any other group.

(4) Women using IUD had a significantly higher rate of gonococcal PID than other groups.

The authors reach the following conclusions:

(*i*) There is no evidence that the use of OC or IUD is causally related to the increased prevalence of gonorrhoea.

(*ii*) There is an increase of gonococcal and non-gonococcal PID in IUD users.

(*iii*) IUD users have a significantly higher degree of symptoms than other groups.

(*iv*) Physical and chemical barriers may be associated with reduced prevalence of gonorrhoea.

J. D. H. Mahony

Gonorrhoeic Chorioamnionitis ENGEBRETSEN, T. (1974) *T. norske Laegeforen.*, **94**, 1920 (Summary)

Prepubescent Gonococcal Vulvovaginitis. A Call for Examination of All Household Members TUNNESSEN, W. W., Jr., and JASTREMSKI, M. (1974) *Clin. Pediat. (Phila.)*, **13**, 675

Gonorrhoea (*Microbiology*)

Inhibition of *Neisseria gonorrhoeae* by a Factor produced by *Candida albicans* HIPP, S. S., LAWTON, W. D., CHEN, N. C., and GAAFAR, H. A. (1974) *Appl. Microbiol*, **27**, 192 (Clinical Microbiology and Immunology)

Swabs were taken in the New York State gonorrhoea screening programme and sent to the authors' laboratory on Transgrow. This medium does not inhibit the growth of *Candida*, and it was noticed that, when *C. albicans* was present, *Neisseria gonorrhoeae* was found less frequently and often could not be sub-cultured readily from the original growth. The authors therefore examined 3,422 random vaginal and/or cervical swabs for both species. Of 710 samples in which a yeast was present, 2 per cent. were presumed positive for *N. gonorrhoeae* by oxidase reagent and Gram-staining but only 28·5 per cent. of these (4/14) were confirmed by immunofluorescence and sugar fermentation. Of 1,468 samples without yeasts, 6 per cent. were presumed positive and 76·5 per cent. of these were confirmed. Various yeasts were then tested for production of an inhibitory substance, using a plate diffusion method. 51 strains of *C. albicans* all showed some inhibitory activity against *N. gonorrhoeae*, but one strain each of *C. tropicalis*, *C. parapsilosis*, and *Trichosporon cutaneum*, and three strains of *Torulopsis glabrata* produced no inhibition. Thirty strains of *N. gonorrhoeae* were tested of which nineteen were inhibited to varying degrees; no other species was inhibited. *C. albicans* and *N. gonorrhoeae* were then mixed together and grown on Transgrow and, even when the ratio was 1:5, 98·8 per cent of the gonococcal cells were lost in 2 days. Finally, a substance was extracted from *C. albicans* with butanol which was shown to inhibit the growth of *N. gonorrhoeae*. The authors wonder whether women with vaginal candidiasis contract gonorrhoea less readily or whether the presence of the yeast simply makes laboratory diagnosis more difficult. [The latter problem would seldom arise if the yeast was prevented from growing by the addition to the medium of an antifungal agent.] *P. M. Waterworth*

Resistance to Gonorrhea possibly mediated by Bacterial Interference KRAUS, S. J., and ELLISON, N. (1974) *Appl. Microbiol.*, **27**, 1014

Two men who had sexual contact with women with genital gonorrhoea and took no precautions failed to develop gonorrhoea. The gonococcus of one of the women was further studied for inhibition by organisms isolated from the urethra of the men. From both men inhibiting strains were isolated and identified as *Staphylococcus epidermidis*. The staphylococci were not inhibited by *Neisseria gonorrhoeae*. Eight random strains of

Staphylococcus epidermidis and 74 clinical isolates of gonococci were tested in the inhibition system. All 74 strains of *Neisseria gonorrhoeae* were inhibited by the staphylococci from the two men and by four of the eight random strains of *Staphylococcus epidermidis*. 311 isolates from the urethra of 75 men without venereal disease were tested for gonococcal inhibition and 18 per cent. inhibited gonococci; 70 per cent. of the inhibitors were *Staphylococcus epidermidis*.

The hypothesis is put forward that bacterial interference may have been a factor in protecting the two men from gonorrhoea. *G. W. Csonka*

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Demonstration of *Neisseria gonorrhoeae* with Fluorescent Antibody in Patients with Disseminated Gonococcal Infection TRONCA, E., HANDSFIELD, H. H., WIESNER, P. J., and HOLMES, K. K. (1974) *J. infect. Dis.*, **129**, 583

This report from Seattle and Atlanta, U.S.A., concerns patients with disseminated gonococcal infection. Gonococci were identified by the direct immunofluorescent (IF) staining method in twenty (57 per cent.) of 35 smears of exudate from pustules, but cultures gave positive results in only four (9 per cent.) of 45 specimens of exudate. Gonococci were cultured from four of seven biopsies of pustules including three with negative results to cultures of exudate; to explain this it is suggested that gonococci in purulent exudate from skin lesions are less easily cultured than organisms in surrounding tissue. Gonococci were identified by IF tests in four of eight buffy-coat smears from patients with negative blood cultures, but in only one of eight synovial fluid specimens which gave negative results on culture. IF smears gave positive results in a few patients who had already received antibiotics. Specimens from ten patients with non-gonococcal dermatitis, seven patients with non-gonococcal arthritis, and buffy-coat smears from seven normal persons gave negative results by the IF method, but smears from two patients with staphylococcal pyoderma showed atypical staining. [Non-specific staining of staphylococci is a well known problem of the gonococcal IF method.]

The direct IF staining method gave a useful number of additional positive results and the authors considered it to be helpful in the rapid diagnosis of disseminated gonococcal infection as well as assisting in the study of the pathogenesis of this condition. *R. N. Thin*

Paradox of Immune Response to Uncomplicated Gonococcal Urethritis KEARNS, D. H., SEIBERT, G. B., O'REILLY, R., LEE, L., and LOGAN, L. (1973) *New Engl. J. Med.*, **289**, 1170

This paper examines the apparent paradox that most patients with multiple episodes of urethral gonorrhoea show an antigonococcal immune response in tests of local and systemic humoral immunity and systemic cellular immunity. A series of 35 men with uncomplicated gonorrhoea were tested for urethral secretory IgA antibodies by indirect immunofluorescence, for serum antibodies by passive haemagglutination, and for gonococci-sensitized lymphocytes by blastogenesis stimulated both by B antigen and a sonicate. Of 24 men with a past history of infection, sixteen had antigonococcal antibodies in the serum, twenty had urethral secretory antibodies, and nineteen showed lymphocyte blastogenesis; thirteen had activity in all three test systems. The eleven men with first infections showed serum antibodies in six cases, local secretory antibodies in nine cases, and blastogenesis in five cases.

Clearly these diverse mechanisms, while possibly limiting the infection to the urethral mucosa, were not of elimination value, and the authors point out that their cases consist only of infected men who developed disease, and thus form a biased group. Nevertheless, the success of the gonococcus depends on some inadequacy of the immune response in all patients, and this paper makes a significant contribution towards tracing it. No doubt they will in due course report work on cases with disseminated infection, and on asymptomatic male contacts of gonorrhoea. *Brian Evans*

***Neisseria gonorrhoeae*: Effects of Systemic Immunisation on Resistance of Chimpanzees to Urethral Infection** ARKO, R. J., KRAUS, S. J., BROWN, W. J., BUCHANAN, T. M., and KUHN, U. S. G. (1974) *J. infect. Dis.*, **130**, 160

Systemic immunization of male chimpanzees with a formalin-killed vaccine greatly increased urethral resistance to infection with organisms from the same isolate of *N. gonorrhoeae*. The immunization procedure entailed weekly injections for 5 weeks. Immunity to gonococcal infection in this study was at least 10 weeks, protection beyond this time not being determined. Prolonged urethral infection 2 years previously with pooled human exudate provided no protection in two animals used this time as controls, and 4 weeks after natural recovery they were again susceptible to re-infection with the homologous isolate. This work demonstrates that there is no effective local urethral immunity to gonorrhoea in chimpanzees. Systemic immunity is shown to be strain-specific and its long-term value remains to be established; moreover, anti-pili antibody levels seem not to provide any indication of protection. *Brian Evans*

Transformation of Lymphocytes in Gonorrhea before and after Therapy ESQUENAZI, V., and STREITFELD, M. M. (1973) *Infect. and Immun.*, **8**, 503

In this study from the University of Miami School of Medicine lymphocyte transformation responses were studied in patients with culture positive gonorrhoea. A variety of *Neisseria gonorrhoeae* antigens and a *Neisseria catarrhalis* sonicate were used to stimulate transformation. Before treatment positive transformation reactions to gonococcal antigens were observed in eight of seventeen patients studied. The authors suggest that this relatively low proportion is due to:

(1) Marked cellular deoxyribonucleic acid synthesis proceeding before antigen challenge so that any further reaction was obscured or inhibited;

(2) The antigens used being relatively impure.

In addition, they observe that details concerning duration of current infection and previous gonorrhoea in the patients studied were lacking.

Lymphocytes were less reactive to gonococcal antigens 5 weeks after treatment.

[This study would have been better if more patients had been examined, if more clinical information had been available about them, and if details of culture technique had been provided.] *R. N. Thin*

Differential Attachment by Piliated and Nonpiliated *Neisseria gonorrhoeae* to Human Sperm JAMES-HOLMQUEST, A. N., SWANSON, J., BUCHANAN, T. M., WENDE, R. D., and WILLIAMS, R. P. (1974) *Infect. and Immun.*, **9**, 897 (Bacterial and Mycotic Infections)

This paper provides evidence of specificity in the attachment to human spermatozoa of piliated type 1 *N. gonorrhoeae*, independent of their viability: 50 per cent. of sperm in an *in vitro* incubation mixture had attached T1 gonococci, compared with 20–25 per cent. of sperm incubated with T4 gonococci. Other piliated bacteria (*E. coli*, *N. subflava*) attached to 40 per cent. of sperm, while other non-piliated species (*N. meningitidis*, *N. catarrhalis*) attached at a similar rate to T4 gonococci. Incubation with antiserum to gonococcal pili reduced attachment of T1 gonococci by half to the level found with T4 and other non-piliated organisms; this occurred in the absence of clumping. Other piliated species were unaffected by this treatment.

Organisms are shown to attach to both the head and the tail of sperm, which, as they are non-phagocytic, allowed observation of the effect of antiserum on attachment independent of any opsonizing effect. This phenomenon could well be critical in the pathogenesis of retrograde infection of the genital tract. *Brian Evans*

Antibiotic Disk Susceptibility Tests with *Neisseria gonorrhoeae* MAIER, T. W., BEILSTEIN, H. R., and ZUBRZYCKI, L. (1974) *Antimicrob. Agents and Chemother.*, **5**, 210

A Note on the use of Reduced Transport Fluid (RTF) for Isolation of *Neisseria gonorrhoeae* FINLAYSON, M. H., WILLEY, K. F. D., BREDE, H. D., and WILSON, A. J. (1974) *Sth. Afr. med. J.*, **48**, 1195

Search for Thymidine Phosphorylase, Nucleoside Deoxyribosyltransferase and Thymidine Kinase in Genus *Neisseria* JYSSUM, S. (1974) *Acta path. microbiol. scand.*, **82**, 53

Isolation and Characterization of the Outer Membrane of *Neisseria gonorrhoeae* JOHNSTON, K. H., and GOTSCHLICH, E. C. (1974) *J. Bact.*, **119**, 250 (Morphology and Ultrastructure)

Gonorrhoea (*Therapy*)

Evaluation of Two Methods of following Women who have been Treated because of Exposure to Gonorrhea MCCORMACK, W. M., RYCHWALSKI, R., and FIUMARA, N. J. (1974) *Amer. J. publ. Hlth*, **64**, 714

One-day Oral Pivampicillin Hydrochloride Treatment for Acute Gonococcal Urethritis in Male Patients HUNTON, R. B., HARPER, R. G., BREMNER, D. A., and HOOKHAM, A. B. (1974) *N.Z. med. J.*, **79**, 907

Non-Specific genital infection

Cultivation of the TRIC agents; a Comparison between the Use of BHK-21 and Irradiated McCoy Cells BLYTH, W. A., and TAVERNE, J. (1974) *J. Hyg. (Lond.)*, **72**, 121

For the isolation of *Chlamydia trachomatis* (TRIC agents) most laboratories use the irradiated McCoy cell system devised in 1965 by Gordon and Quan. This method presents difficulties for some laboratories, and there is clearly room for simpler isolation methods. Although a virtually unsubstantiated belief that irradiated McCoy cells have some special advantage for the isolation of *C. trachomatis* has become widespread, there have been few controlled quantitative experiments to support it.

In this study the authors show that in their hands BHK-21 or HeLa cells are as sensitive as irradiated McCoy cells for titrating *C. trachomatis*. Further tests with BHK-21 cells showed these to be as efficient as irradiated McCoy cells for isolating *C. trachomatis* from conjunctival specimens obtained from patients with trachoma and from urethral specimens from men with acute non-gonococcal urethritis. Although these studies were not designed to measure the rate of isolation of *C. trachomatis* from clinical specimens, more inclusions were found in BHK-21 than in irradiated McCoy cells.

The authors conclude that the important factor permitting the efficient multiplication of *C. trachomatis* in cell culture is the choice of stationary, non-dividing cells; these can be obtained by various manipulations of cultural conditions, including previous irradiation. *P. Reeve*

Simplified method for diagnosis of genital and ocular infections with *Chlamydia* HOBSON, D., JOHNSON, F. W. A., REES, E., and TAIT, I. A. (1974) *Lancet*, **2**, 555

This paper should be read in conjunction with the study by Blyth and Taverne (see above). The authors have used a simplified technique for the isolation of *C. trachomatis* from clinical specimens, using monolayers of nonirradiated McCoy cells. *C. trachomatis* was recovered from the cervix of 38 (20 per cent.) of 190 women with various gynaecological complaints and from fifteen (23·5 per cent.) of 64 contacts of men with non-gonococcal urethritis. Conjunctival swabs from seven (39 per cent). of eighteen infants with neonatal mucopurulent conjunctival discharge also gave positive results.

The authors suggest that this technique appears to be of reasonable sensitivity and could be used by the average laboratory without special facilities for radiobiology. *P. Reeve*

Non-specific Genital Infection (1974) *Brit. med. J.*, **2**, 759 (Leader)

Cotrimoxazole in the Treatment of Non-gonococcal Urethritis WILLCOX, R. R., and SPARROW, R. W. (1974) *Acta derm.-venereol. (Stockh.)*, **54**, 317

Application of Indirect Immunofluorescence, Indirect Haemagglutination, and Polyacrylamide-gel Electrophoresis to Human T-mycoplasmas BLACK, F. T., and KROGSGAARD-JENSEN, A. (1974) *Acta path. microbiol. scand.*, **82**, 345

Serological Activity of Lipids of a T-Strain of Mycoplasma ROMANA, N., and SCARLATA, G. (1974) *Infect. and Immun.*, **9,** 1062 (Bacterial and Mycotic Infections)

Candidosis

Transfer Factor Therapy in a Patient with Chronic Vaginal Candidiasis GROB, P. J. (1974) *J. Obstet. Gynaec. Brit. Cwlth*, **81,** 812

A patient with a 5-year history of vaginal candidosis resistant to several local antifungal agents was treated with a dialysable extract of human leucocytes (Transfer Factor) on the basis of tests which revealed defective cell-mediated immunity (CMI).

After treatment the patient had one episode of recurrent pruritus which responded quickly to a 10-day course of a different antifungal agent from those used previously. Thereafter she remained symptom-free, although vaginal cultures remained positive for *Candida*. It is suggested that the CMI defect had been rectified by Transfer Factor therapy.

D. C. MacD. Burns

Candidiasis of the Urinary Tract HILL, J. T. (1974) *Proc. roy. Soc. Med.*, **67,** 1155

Treatment of Vulval Candidiasis with 5-Fluorocytosine HOLT, R. J. (1974) *Brit. med. J.*, **2,** 523 (Letter)

Boric Acid Treatment of Vulvovaginal Candidiasis SWATE, T. E., and WEED, J. C. (1974) *Obstet. and Gynec.*, **43,** 893

Evaluation of Media for Selective Isolation of Yeasts from Oral, Rectal, and Burn Wound Specimens SMITH, R. F., BLASI, D., and DAYTON, S. L. (1974) *Appl. Microbiol*, **28,** 112 (Clinical Microbiology and Immunology)

Factors Present in Serum and Seminal Plasma which promote Germ-tube Formation and Mycelial Growth of *Candida albicans* BARLOW, A. J. E., ALDERSLEY, T., and CHATTAWAY, F. W. (1974) *J. gen. Microbiol.*, **82,** 261

Efficacy of the *Candida* Precipitin Test. Verification with a Protoplast Antigen Preparation. VENEZIA, R. A., and ROBERTSON, R. G. (1974) *Amer. J. clin. Path.*, **61,** 849

Effect of 5-Fluorocytosine on the Internal Amino-Acid Pool and Protein Synthesis in *Candida albicans* POLAK, A. (1974) *Path. et Microbiol. (Basel)*, **40,** 132

Role of Macrophages in *Candida albicans* Infection *in vitro* OZATO, K., and UESAKA, I. (1974) *Jap. J. Microbiol.*, **18,** 29

125 I-labelling of *Candida albicans* by Electrolysis VIKEN, K. E. (1974) *Acta path. microbiol. scand.*, **82,** 219

Assessment of Germ-Tube Dispersion Activity of Serum from Experimental Candidiasis: a New Procedure for Serodiagnosis KATSURA, Y., and UESAKA, I. (1974) *Infect. and Immun.*, **9,** 788 (Immunology)

Polyene Resistant *Candida albicans:* A Proposed Nutritional Influence HAMMOND, S. M., and KLIGER, B. N. (1974) *Microbios*, **10,** 97

Effect of 5-Fluorocytosine and Amphotericin B on *Candida albicans* Infection in Mice RABINOVICH, S., SHAW, B. D., BRYANT, T., and DONTA, S. T. (1974) *J. infect. Dis.*, **130,** 28

Genital herpes

Specific IgG and IgM Antibody Responses in Herpes Simplex Virus Infections KURTZ, J. B. (1974) *J. med. Microbiol.*, **7,** 333

Serological tests have a limited value in the diagnosis of recent or recurrent herpes virus (HSV) infection because a high proportion of the population have antibodies against HSV. In some viral diseases the presence of IgM in serum may signify recent or continuing infection and may have diagnostic significance. In this study, the antibody response, in terms of both IgG and IgM, was examined in several clinical varieties of HSV infection. Antibodies were measured using the complement fixation and indirect FA tests.

With primary oral or genital infections, by the use of the indirect FA test, both IgG and IgM antibodies were detected 6 days after infection; IgM persisted for 8 weeks or more. With recurrent herpes, although IgG was detected, changes in titre were not seen and only insignificant IgM levels were measured. With HSV encephalitis, serum responses were similar to those seen in other primary infections.

IgG (but not IgM) was detected in CSF at levels suggesting local production. Such a finding may be useful in retrospective diagnoses, and the author considers that the finding of HSV IgM at titres of 1 in 8 or above may be of use in the diagnosis of HSV encephalitis. *P. Reeve*

Association between Herpes Hominis Type 2 and the Male Genitourinary Tract DEARDOURFF, S. L., DETURE, F. A., DRYLIE, D. M., CENTIFANO, Y., and KAUFMAN, H. (1974) *J. Urol. (Baltimore)*, **112,** 126

Urethral swabs, prostatic fluid, prostatic biopsies, vas deferens sections, testicular biopsies, or foreskin biopsies were taken from a randomly selected group of 273 men whose ages varied from 15 to 85 years. They had no previous history of herpetic genital infection. Forty positive Type 2 Herpesvirus cultures were reported from this group, a recovery rate of 15 per cent. There was no significant difference in the ages of the groups studied, but prostatic fluid culture and vas deferens sections had two to four times as high a yield as urethral swabs.

The authors comment that herpesvirus is present in the male genitourinary tract but that its role here awaits definition. *J. T. Wright*

Variables influencing the *in vitro* Susceptibilities of Herpes Simplex Viruses to Antiviral Drugs MARKS, M. I. (1974) *Antimicrob. Agents Chemother.*, **6,** 34

Several drugs have been shown to have significant antiviral activity when tested against herpesvirus simplex (HSV) *in vitro* and *in vivo* and some, such as 5-iodo-2′-deoxyuridine

(IUDR) and cytosine arabinoside (ARA C), have been used clinically with some success. The results *in vitro* do not always correlate with efficacy *in vivo* and many experimental investigations have been confined to the study of a limited number of virus strains in only one or two cell-culture systems or animal hosts.

This study describes a valuable comparison of six antiviral drugs tested against nine clinical isolates of HSV in three cell types. An elegant micromethod is described. Results showed marked variations between the susceptibilities of different HSV isolates to different drugs. For example, although all isolates were susceptible to arabinofuranosyladenine (confirming numerous previous reports), up to 20-fold differences in susceptibility were shown.

Three antiviral agents, 'virazole', 2-deoxy-D-glucose, and isoprinosine were ineffective in these studies, in contrast to previous findings by other workers of their effectiveness against other HSV isolates in different cell systems. *P. Reeve*

Recurrent Herpes Genitalis: Treatment with *Mycobacterium bovis* (BCG) ANDERSON, F. D., USHIJIMA, R. N., and LARSON, C. L. (1974) *Obstet. and Gynec.*, **43,** 797

It has been shown previously that rabbits can be protected from the lethal effects of HSV Type 2 infection by immunization with *Mycobacterium bovis* (BCG). It is presumed that non-specific stimulation of cell-mediated immunity (CMI) is responsible; it is known that CMI plays an important role in resistance to herpetic and other viral infections.

The present study was undertaken to determine whether immunization with BCG was of value in the management of recurrent genital herpes infections. Of thirty patients with genital herpes from whom virus was isolated, fifteen with a history of recurrent infections were selected for immunization. All showed a dramatic decrease in the frequency of attacks of herpes. Patients who became pregnant during the study showed a less striking decrease in herpes infections, but the authors claim some improvement in this group as well. It appears that pregnancy, and oral contraceptives can diminish CMI, including response to BCG.

This study indicates that immunization with BCG may be of value in the clinical management of patients with recurrent herpes. However, the results are based on a limited number of observations, and the studies were not controlled or made on a double-blind basis.

P. Reeve

Relation of Type 2 Herpesvirus Antibodies to Cervical Neoplasia: Barbados, West Indies, 1971 ORY, H., CONGER, B., RICHART, R., and BARRON, B. (1973) *Obstet. and Gynec.*, **43,** 901

The relation between herpes simplex Type 2 (HSV-2) antibodies and cervical neoplasia was analysed in a small subset of women who had been part of a cervical cytological screening campaign in Barbados, West Indies, since 1964. 50 per cent. of the chosen sample were contacted during a door-to-door survey. A serological specimen was drawn from each woman. The serum was separated, frozen, and returned to the United States for testing for type-specific herpesvirus antibodies by the complement-fixation technique. The relative risk that a woman with herpes HSV-2 antibody had cervical cancer was 10·4 ($P < 0.025$). This risk was not explained by differences in cases and controls with respect to age, total number of pregnancies, age at first pregnancy, or age at first coitus. There was no significant relation between prevalence of HSV-2 antibodies and cervical dysplasia. The question still unanswered is whether the herpetic infection precedes or follows the development of cervical cancer. A cohort study should be done to answer this question. *Authors' summary*

Neutralizing Antibodies to Herpesvirus Types 1 and 2 in Montreal Women McDONALD, A. D., WILLIAMS, M. C., WEST, R., and STEWART, J. (1973) *Amer. J. Epidemiol.*, **100,** 124

Sera from 564 females aged 2 to 55 years from a random sample of households in Metropolitan Montreal were tested by microneutralization for antibodies to herpesvirus Types 1 and 2. Some 65 per cent. of children aged 2 to 15 years were without herpesvirus antibody but only 7 per cent. of women aged 46 to 55 years. Neutralizing antibodies resulting from a Type 2 infection were estimated using the ratio of Type 2 to Type 1 titres. Herpesvirus Type 2 infections were thus found to have occurred infrequently in females of less than 16 years but in 24 per cent. of those aged 45 to 55 years. The prevalence of antibodies to both types of herpesvirus was clearly associated with mean annual income in the census tract of residence. Evidence of an infection by either type was found at a considerably later age in persons living in higher income areas. The transmission of both oral and genital herpesvirus appears to be similarly influenced by living conditions.

Authors' summary

Neutralizing Antibodies to Herpesvirus Types 1 and 2 in Carcinoma of the Cervix, Carcinoma *in situ*, and Cervical Dysplasia McDONALD, A. D., WILLIAMS, M. C., MANFREDA, J., and WEST, R. (1973) *Amer. J. Epidemiol.*, **100,** 130

Neutralizing antibodies to herpesvirus Types 1 and 2 were estimated by microneutralization in 57 women with invasive carcinoma of the cervix, fifty with carcinoma *in situ*, 39 with cervical dysplasia, and equal numbers of matched controls. The ratio of Type 2/Type 1 herpesvirus neutralizing antibody was calculated and sera in which the ratio was 0·85 or more were called Type 2. Among cases of invasive carcinoma and their controls, twenty cases (35 per cent.) and twelve controls (21 per cent.) were Type 2. Hotelling's T^2 test, taking into account differences in titre as well as in ratio, yielded a probability close to 0·16. For carcinoma *in situ* the proportions were 40 and 32 per cent. and for cervical dysplasia 30·8 and 38·4 per cent. The controls who came from gynaecological clinics had a higher prevalence of Type 2 sera than women in the general population—a finding that merits investigation. The absence of a major difference in prevalence of sera Type 2 in Jewish compared with non-Jewish women suggests that their different susceptibility to carcinoma of the cervix is not

connected with herpesvirus experience. The findings of this survey were inconclusive.

Authors' summary

Genital Herpes CHANG, T-W., FIUMARA, N. J., and WEINSTEIN, L. (1974) *J. Amer. med. Ass.*, **229**, 544

Treatment of Genital Herpes GOSLING, P. H. (1974) *Brit. med. J.*, **2**, 473 (Letter)

Untreated Neonatal Herpes Simplex 2 Meningitis without Apparent Neurologic Damage FRENTZ, J. M., GOHD, R. S., and WOODY, N. C. (1974) *J. Pediat.*, **85**, 77

A Temperature-sensitive Mutant of Herpes Simplex Virus Type 1 Defective in the Synthesis of the Major Capsid Polypeptide BONE, D. R., and COURTNEY, R. J. (1974) *J. gen. Virol.*, **24**, 17

Diagnosis of Recent Herpes simplex Infections. A Modified Immunofluorescent Test for the Detection of Specific Herpes Simplex IgM Antibodies after Staphylococcal Adsorption of IgG SKAUG, K., and TJØTTA, E. (1974) *Acta path. microbiol. scand.*, **82**, 323

Evidence that Neurona harbor Latent Herpes Simplex Virus COOK, M. L., BASTONE, V. B., and STEVENS, J. G. (1974) *Infect. and Immun.*, **9**, 946 (Viral Infections)

Regulation of Herpesvirus Macromolecular Synthesis I. Cascade Regulation of the Synthesis of Three Groups of Viral Proteins. HONESS, R. W., and ROIZMAN, B. (1974) *J. Virol.*, **14**, 8 (Animal Viruses)

The IgG Receptor induced by Herpes Simplex Virus: Studies using Radioiodinated IgG, WESTMORELAND, D., and WATKINS, J.F. (1974) *J. gen. Virol.*, **24**, 167

Reactivity of Envelope, Capsid, and Soluble Antigens of *Herpesvirus hominis* Types 1 and 2 in the Indirect Hemagglutination Test BACK, A. F., and SCHMIDT, N. J. (1974) *Infect. and Immun.*, **10**, 102 (Viral Infections)

Serologic Responses to Herpes Simplex Virus in Rabbits: Complement-requiring Neutralizing, Conventional Neutralizing, and Passive Hemagglutinating Antibodies LERNER, A. M., SHIPPEY, M. J., and CRANE, L. R. (1974) *J. infect. Dis.*, **129**, 623

Early Functions of the Genome of Herpesvirus III. Inhibition of the Transcription of the Viral Genome in Cells treated with Cycloheximide Early during the Infective Process JEAN, J.-H., BEN-PORAT, T., and KAPLAN, A. S. (1974) *Virology*, **59**, 516

IV. Fate and Translation of Immediate-Early Viral RNA BEN-PORAT, T., JEAN, J.-H., and KAPLAN, A. S. (1974) *Virology*, **59**, 524

Inactivation of Herpes Simplex Virus by Concanavalin MICHIO ITO, A., and BARRON, A. L. (1974) *J. Virol.*, **13**, 1312 (Animal Viruses)

Inhibition of Herpes Virus-induced Cell Fusion by Concanavalin A, Antisera, and 2-Deoxy-D-Glucose LUDWIG, H., BECHT, H., and ROTT, R. (1974) *J. Virol.*, **14**, 307 (Animal Viruses)

Inhibition of Herpes Simplex Virus Type 2 Replication by Thymidine COHEN, G. H., FACTOR, M. N., and PONCE DE LEON M. (1974) *J. Virol.*, **14**, 20 (Animal Viruses)

Other sexually-transmitted diseases

Podophyllin Poisoning associated with the Treatment of Condyloma Acuminatum. A Case Report MONTALDI, D. H., GIAMBRONE, J. P., COUREY, N. G., and TAEFI, P. (1974) *Amer. J. Obstet. Gynec.*, **119**, 1130

Once again, severe systemic effects following podophyllin treatment of genital warts have been reported. This patient was a 20-year-old black woman who attended Deaconess Hospital, Buffalo, with extensive wart formations on the vulva, vagina, and perineum. The authors do not state whether the patient was investigated for other genital infections. She was not pregnant.

Under general anaesthesia, some of the perineal warts were excised but the disease was so extensive that the surgeon decided to treat the vaginal warts with "a generous application" of 25 per cent. podophyllin in tincture of benzoin. The patient's immediate postoperative state was satisfactory, but 13½ hrs later she vomited, and 6 hrs after this became semi-comatose with tachycardia and shallow and rapid respiration. There were no distinctive clinical abnormalities of the CNS, but an EEG showed markedly abnormal findings with diffuse slow activity.

Treatment was largely supportive, and on the 7th postoperative day she showed signs of improvement and reaction to stimuli. The following day she began speaking, and 8 days after this the EEG had returned to normal, although she displayed muscular weakness and an unsteady gait. She was discharged on the 25th postoperative day apparently in good condition.

It is of interest that the clinical findings in this patient were more suggestive of an encephalitis than of the peripheral neuropathy which usually occurs in podophyllin poisoning and that, unlike most of the others reported, she was not pregnant. One wonders how many more cases of this kind must occur before the application of podophyllin to extensive genital warts is finally abandoned.

J. D. Oriel

Lymphogranuloma Venereum in Australia I. Clinical Aspects of the Disease and Isolation and Identification of the Causal Agent from a Patient in Melbourne GRAHAM, D. M., PRASZKIER, J., and ROLLO, D. J. (1974) *Med. J. Aust.*, **2**, 239

The Recrudescence of Soft Chancre (Sur la récrudescence actuelle des chancres mous) DEGOS, R., DUPERRAT, B., DE GRACIANSKY, P., and MERKLEN, F.-P. (1973) *Bull. Soc. franç. Derm. Syph.*, **80**, 597

Public health and social aspects

An Epidemiologic Study of Sexually-Transmitted Diseases on a University Campus

DRUSIN, L. M., MAGAGNA, J., YANO, K., and LEY, A. B. (1974) *Amer. J. Epidem.*, **100**, 8

In this paper the mortality rate in cohorts of 5-year age groupings is plotted above the curves of the national incidence of gonorrhoea in England and Scotland, where the average age of the cohort was 20 years. This shows a strong association between exposure to gonorrhoea and subsequent mortality from cervical cancer.

The geographical distributions of sexually-transmitted disease and of cervical cancer are similar. Cervical cancer shows a strong class gradient. Male occupations involving travel and absence from home are associated with higher mortality among wives.

There is no direct information on changes in the age at the time of the first coitus, but the average age of women at marriage has fallen from 25·8 in 1921 to 22·4 in 1971. If earlier intercourse was a cancer determinant, an increasing mortality in successive generations would be expected. This is not found.

The mortality from malignancy does, however, follow the trends in sexually-transmitted disease. The patterns observed strongly suggest that cervical cancer follows, at a variable interval, exposure to genital infection in early life.

Women born in Great Britain after 1940 are already experiencing an increased mortality from cervical cancer. Although the number of deaths is small, a continuing higher risk in this generation of women can be predicted. *W. F. Felton*

Miscellaneous

Hemophilus influenzae Septic Arthritis. A Mimicker of Gonococcal Arthritis

KRAUSS, D. S., ARONSON, M. D., GUMP, D. W., and NEWCOMBE, D. S. (1974) *Arthr. and Rheum.*, **17**, 267

A 22-year-old woman with disseminated lupus erythematosus who was taking corticosteroids presented with fever, polyarthritis, tenosynovitis, and pustular and erysipeloid skin lesions.

The association of these symptoms with a history of a recent sexual contact and trichomonal vaginitis led to treatment with cephalothin for suspected gonococcal arthritis. The treatment was changed to chloramphenicol when *Haemophilus influenzae* was cultured from the blood and the typically greenish-yellow joint fluid and recovery was subsequently rapid.

Gonococcal infection is by far the commonest cause of the 'dermatitis-septic arthritis' syndrome, but the authors point out that other organisms may occasionally produce the syndrome. They suggest that *H. influenzae* septicaemia may be increasing. *Ann Miller*

Cancer of the Cervix: A Sexually-Transmitted Disease

BERAL, V. (1974) *Lancet*, **1**, 1037

Since the observation that cancer of the uterine cervix is almost unknown in nuns, it has been established that sexual activity is a major factor in its genesis. There are two current aetiological hypotheses. The first stresses the age at the time of first intercourse and suggests that the cervical epithelial cells are especially vulnerable to carcinogens. The second emphasizes factors related to the multiplicity of sexual partners, not only of the woman herself but of her consorts.

Isolation and Identification of *Corynebacterium vaginale* (*Haemophilus vaginalis*) in Women with Infections of the Lower Genital Tract

ÅKERLUND, M., and MÅRDH, P.-A. (1974) *Acta obstet. gynaec. scand.*, **53**, 85

This study was carried out jointly between the Department of Obstetrics and Gynaecology, University Hospital of Lund, and the Institute of Medical Microbiology, University of Lund, Sweden, to investigate the presence and significance of *Corynebacterium vaginale* (*Haemophilus vaginalis*) and other organisms, especially *N. gonorrhoeae*, *Mycoplasma hominis*, and *T. vaginalis*, in women with lower genital tract infection (LGTI).

It was found that all seventy women with LGTI complained of increased vaginal discharge which was often foul-smelling and accompanied by vulval itching or burning. Examination of these patients revealed heavy vaginal discharge, purulent issue from the cervix, and erythema of the vaginal mucous membrane. *C. vaginale* was isolated in 31·4 per cent. of this group, and in 5·7 per cent. it was the *only* organism isolated from the cervix. *M. hominis* was recovered from 44·2 per cent. of the women and from 81·8 per cent. of those who harboured *C. vaginale*. Only 4·5 per cent. of *C. vaginale*-positive women, however, were found to have a *T. vaginalis* infestation. Six had coliform bacilli on cervical culture and seven had enterococci. *Proteus* spp. were found in only one. Five showed *C. albicans*.

A control group of 28 healthy patients of similar socio-economic states and age (mostly 17 to 40 years), who had attended for routine contraception advice or simply for a 'check-up', was compared with the seventy patients. *C. vaginale* was not found in any of them, but *M. hominis* was present in 7·1 per cent.

The bacteriological isolation procedures are described in some detail, which should be referred to in the original paper. For the isolation of *C. vaginale*, peptone-starch-dextrose agar (Difco) and also Cassman's medium containing 5 per cent. sheep blood were inoculated with cervical swabs. A gas chromatography technique was used to identify suspected colonies of *C. vaginale* by reference to their associated volatile fatty acid 'peaks'. *In vitro* sensitivity tests implied that *C. vaginale* infections would be resistant to sulphonamides.

The authors found that several commonly-held views were untrue:

(1) That *C. vaginalis* should be strongly suspected in women with homogeneous foul-smelling discharge. In this study the incidence of this finding in women with LGTI was the same whether *C. vaginale* was present or not.

(2) That wet mounts in patients with *C. vaginale* cervicitis show very few leucocytes. The contrary was found to apply in this series.

(3) That clue cells (*i.e.* epithelial cells covered with coccoid bacteria) are particularly associated with *C. vaginale* infection. In this study 'clue cells' were just as commonly

associated with other types of infection. However, these cells showed a negative correlation to the presence of Döderlein-type bacilli. It was noted moreover that *C. vaginale* was not found in the cervix of patients whose vaginal flora showed a predominance of bacilli of Döderlein type.

The authors conclude by emphasizing that mixed infections are common in patients harbouring *C. vaginale* and that this must be taken into account when considering therapy. The possible venereal mode of transmission of *C. vaginale* is referred to, but did not form part of the present study.

J. D. H. Mahony

Erythroplasia of Queyrat
REGE, P. R., and EVANS, A. T. (1974)
J. Urol. (Baltimore), **111,** 784

Erythroplasia of Queyrat
GOETTE, D. K. (1974)
Arch. Derm., **110,** 271

(1) The authors of the first paper describe a 56-year-old man with erythroplasia of Queyrat in the form of a moist, red, flat-topped lesion present on the foreskin of the penis for 6 years, at the site of a chancre 27 years previously. The histology was that of an intraepidermal carcinoma. They point out that, because of its association with Bowen's disease, internal malignancy should be excluded in patients with erythroplasia of Queyrat. They recommend that treatment should be local excision.

(2) The authors of the second paper, however, suggest that topical fluorouracil may be of value. They describe a 72-year-old man who had had for 6 years a velvety erythematous plaque on the dorsal aspect of the foreskin. The histology was that of erythroplasia of Queyrat. He was treated with 1 per cent. fluoro-uracil ointment for 2 weeks without benefit, but after 4 weeks of twice-daily therapy with 5 per cent. fluoro-uracil ointment the lesion cleared clinically and histologically. There has been no relapse after 16 months. Four other patients have been treated in a similar manner with good results; two relapsed, but responded to a repetition of fluoro-uracil therapy. This treatment is easy to use for out-patients, but may be associated with inflammation and discomfort. The authors point out that it should not be used in sexually active patients as absorption of small amounts might produce teratogenic effects.

Dorothy M. Thompson

Verrucous Carcinoma of Female Genital Tract LUCAS, W. E., BERNIRSCHE, K., and LEBHERS, T. B. (1974) *Amer. J. Obstet. Gynec.*, **119,** 435

The authors report three new cases of verrucous carcinoma of the female genitalia conforming to the original descriptions by Buschke and Lowenstein, bringing the total number of cases reported in the English literature to seventeen. They suggest that this may be a more common form of genital cancer than was previously recognized.

It is often not possible to distinguish histologically with any degree of accuracy between squamous papilloma, *condyloma acuminatum*, and well-differentiated squamous carcinoma. The clinical appearance and behaviour of an individual lesion may, unfortunately, be the best diagnostic guide.

These tumours are locally invasive but may spread to regional lymph nodes. Distant metastases are rare but the authors mention a case (reported by Snock) of pulmonary metastasis appearing in a patient treated locally with podophyllin and electrocautery.

The authors suggest that genital condylomata which do not respond to conventional topical applications, cryosurgery, or fulguration, and particularly those that increase in size in the face of conservative treatment, should be widely excised and subjected to detailed histological study. Accurate early diagnosis and wide local excision may avoid radical and disfiguring surgical procedures later.

R. Sarkhel

Rubella and Cytomegalovirus: Current Concepts of Congenital and Acquired Infection
KIBRICK, S., and LORIA, R. M. (1974)
Pediat. Clin. N. Amer., **21,** 513

Cytomegalovirus Again (1974)
Brit. med. J., **2,** 593 (Leader)

Cytomegalovirus Infections in New York State: Laboratory Studies of Patients and Healthy Individuals
DEIBEL, R., SMITH, R., CLARKE, L. M., DECHER, W., and JACOBS, J. (1974)
N.Y. St. J. Med., **74,** 785

Gonorrhoea in Obstetrics and Gynaecology
LANIGAN-O'KEEFE, F. M. (1974)
Brit. med. J., **3,** 106 (Letter)

Cancer of the Cervix: a Sexually Transmitted Infection?
GARDNER, J. W., and LYON, J. L. (1974) *Lancet*, **2,** 470 (Letter)

Cervical Cancer and Sexual Behaviour JAMES, W. (1974)
Lancet, **2,** 657 (Letter)

Lichen Sclerosus et Atrophicus in the Bantu DOGLIOTTI, M., BENTLEY-PHILLIPS, C. B., and SCHMAMAN, A. (1974)
Brit. J. Derm., **91,** 81

Malignant Melanoma of the Penis
BARUAH, B. D., and DUTTA, A. (1974)
J. Indian med. Ass., **62,** 354

Renal Damage during Combined Therapy with Gentamicin and Cephalothin KNUTSEN, B., JR., WESTLIE, L., WETTELAND, P., and GLØERSEN, T. G. (1974)
T. norske Laegeforen,. **94,** 1469 (Summary)

Analysis of *Corynebacterium vaginale* by an Immunodiffusion Technique
SMARON, M. F., and VICE, J. L. (1974)
Appl. Microbiol., **27,** 469

Venereal Disease in Vietnam: Clinical Experience at a Major Military Hospital
SHAPIRO, S. R., and BRESCHI, L. C. (1974) *Milit. Med.*, **140,** 374

Venereal Disease in the Wellington Hospital Women's Clinic, 1971
CHARTERS, D., and BREMMER, K. R. (1974) *N.Z. med. J.*, **79,** 679